# Printer

**Never pull printer paper backwards through the printer. This will damage the print head. STATprinter units contain electronic components that may be damaged or destroyed by electro-static discharge (esd). Observe appropriate safeguards when servicing. Always transport electronic components and assembles in static-protected packaging.**

The STATprinter is an optional device for use with the STAT*IM* 2000 or an upgraded / modified STAT*IM* Cassette Autoclave. Each autoclave is referred to as the host unit and has a printer connector port.

## STATPRINTER Cover Removal and Replacement

To remove the STATprinter cover (1), follow these steps, (see Figure 1):

1. Turn the host unit power **OFF**.

   1.1 Turn Printer off.

2. Disconnect the printer cable (2) from the host unit printer connector port and the STATprinter.

3. Remove the four screws (3) securing the cover to the printer base (4) and retain the screws for reassembly. Remove the cover.

4. Disconnect the Printer Driver ribbon cable (5) from the Printer Interface board (6).

To replace the STATprinter cover, follow these steps, (see Figure 1):

1. Connect the Printer Driver ribbon cable (5) to the Printer Interface board (6).

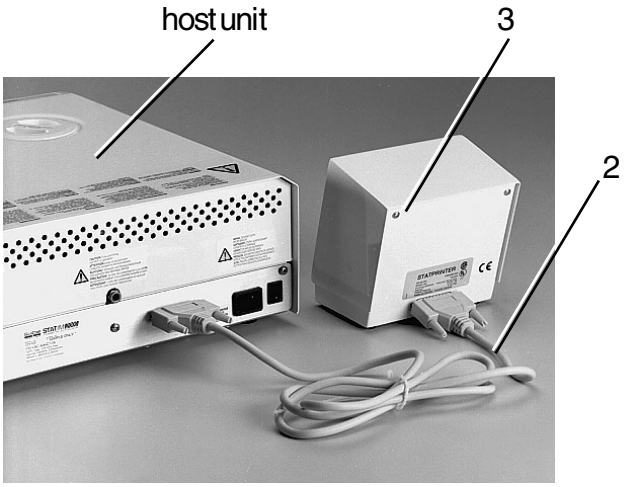
2. Reinstall the cover (1) on the printer base (4) using the four screws (3) retained from disassembly.

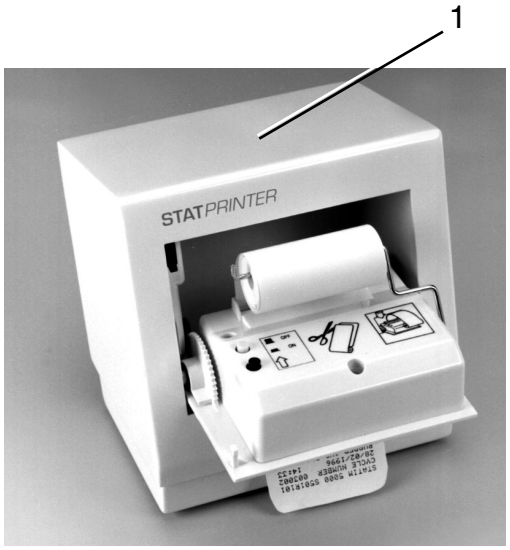
3. Connect the printer cable connector (2) to the printer connector port at the rear of the host unit and the STATprinter.

4. Power the host unit **ON**.

5. Power the printer **ON**.

# Printer




1. cover
2. printer cable
3. screws
4. printer base
5. Printer Driver cable
6. Printer Interface board

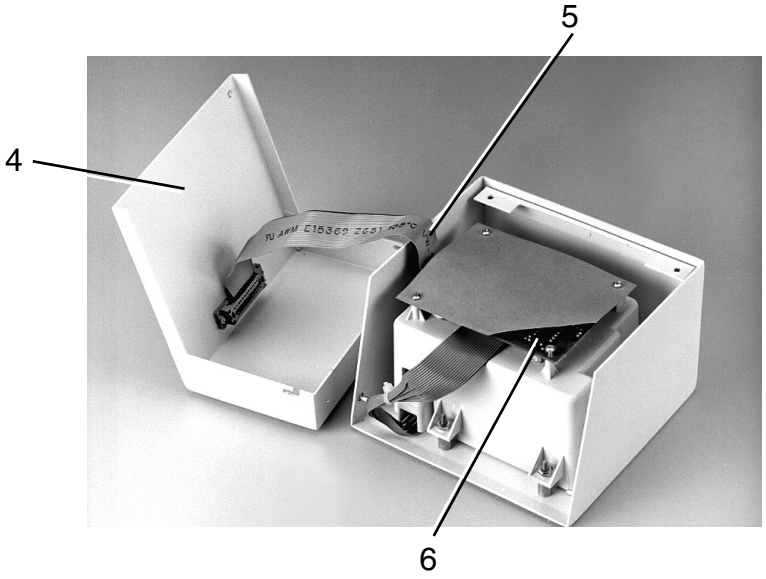



**Figure 1**

# Printer

## Removing the Printer Module

To remove the printer module assembly (1), follow these steps (see Figure 2):

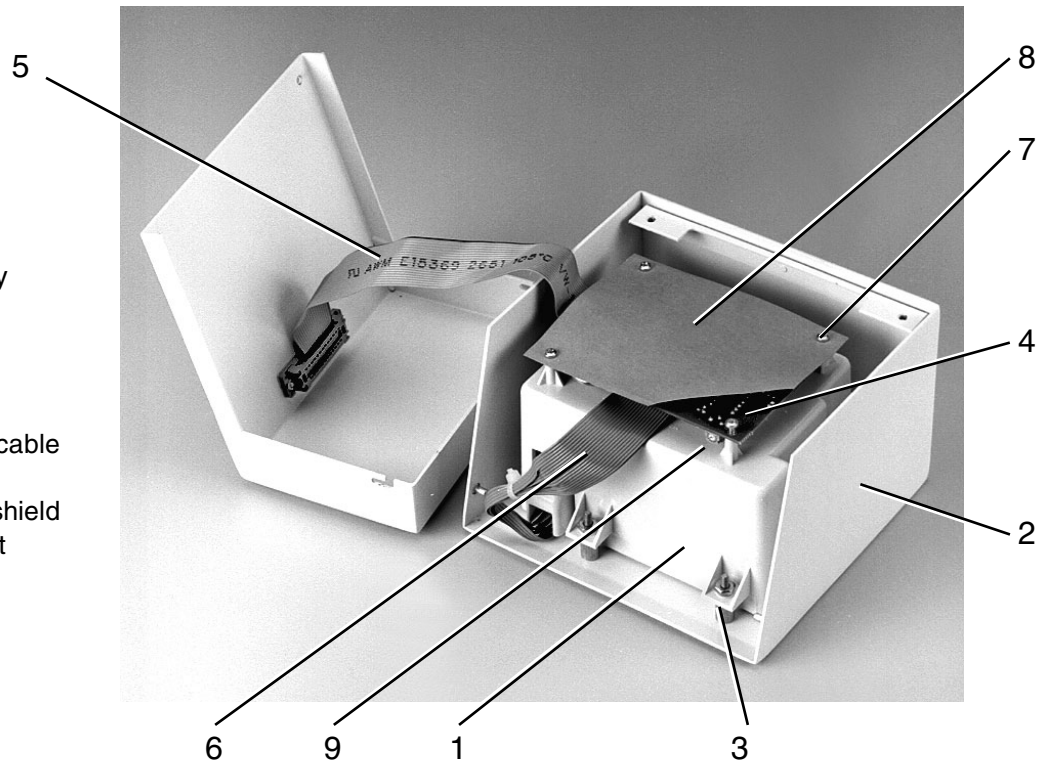
1. Place the printer cover (2) containing the printer module on a clean work surface to avoid scratching the cover surface.
2. Remove four screws (3) securing the printer module assembly to the printer cover. Retain the screws.
3. Remove the module from the printer cover.

## Replacing the Printer Module

To replace the printer module (1), follow these steps (see Figure 2):

1. Install the printer module assembly in the printer cover (2) using the four screws (3) retained during disassembly.
2. If the module contains a new Printer Interface Board, or a new printer, the print quality may require adjustment. See Adjusting Print Quality. See, Printer Interface Board.

Printer Interface board shield - with cut-away to show board




1. printer module assembly
2. printer cover
3. screws (for module)
4. Printer Interface board
5. Printer Driver cable
6. Printer Interface ribbon cable
7. screws (for board)
8. Printer Interface Board shield
9. R21 contrast adjustment

**Figure 2**

# Printer

## Removing the Printer Interface Board

To remove the Printer Interface Board (4), follow these steps (see Figure 2):

**STAT*IM* units contain electronic components that may be damaged or destroyed by electrostatic discharge (esd). Observe appropriate safeguards when servicing. Always transport electronic components and assembles in static-protected packaging.**

1. Disconnect the Printer Driver ribbon cable (5) and Printer Interface ribbon cable (6). See *Printer Interface Board*.
2. Using a #1 Phillips screwdriver, remove the four screws (7) from the Printer Interface Board. Retain the screws.
3. Remove and retain the Printer Interface Board and the Printer Interface Board shield (8).
4. Replace the Printer Interface Board as described in *Replacing the Printer Interface Board*.
5. Replace the printer module on the cover as described in, *Replacing the Printer Module*.
6. Adjust the print quality as described in, *Adjusting Print Quality*.
7. Reset the time and date on the host unit as described in the Operator's Manual, and perform the test described in *Removing and Replacing the Battery*.

## Removing and Replacing the Battery

**Observe appropriate ESD safeguards when servicing.**

You may encounter printers that were manufactured with replaceable batteries or printers manufactured with soldered batteries. Replaceable batteries must be properly stored and handled to avoid discharge. The time and date functions of the printer are battery supported when the unit is not running. If the time or date printout is incorrect, try resetting the time and date as described in the Operator's Manual.

Power the printer and host unit **OFF** and wait several minutes before powering them back **ON**. If the time and date are still incorrect, replace the battery on the Printer Interface Board. To replace the battery,

# Printer

follow these steps (see *Printer Interface Board / Printer Board Schematics and Reference Drawings* ):

1. Remove the Printer Interface Board as described in Removing the Printer Interface Board.

2a. If there is a replaceable battery, remove and discard the old battery. Install a new battery. Always replace the battery with a fresh battery of equal rating and size.

2b. If the battery is soldered, carefully desolder BAT1 from the component side of the board. Note the orientation of the anode and cathode. Solder the replacement battery in position BAT1.

## Replacing the Printer Interface Board

To replace the Printer Interface Board, follow these steps (see Figure 2):

**STAT*IM* 2000 / 2000S units contain electronic components which may be damaged or destroyed by electro-static discharge (ESD). Observe appropriate safeguards when servicing. Always transport electronic components and assemblies in static-protected packaging.**

1. Connect the Printer Interface ribbon cable (6) to Printer Interface Board header P1. Cable assemblies may differ. If the connector is not polarized, note the orientation of Pin 1 of the connector and Pin 1 of the board.

2. Connect the printer ribbon cable (5) connector to Printer Interface Board header P2.

3. Place the Printer Interface Board (4), component side down, on the module. Replace the Printer Interface Board shield (8) and insert the four screws (7) retained during disassembly.

4. If the Printer Interface Board has been repaired, or if a new Printer Interface Board has been installed, the print quality may require adjustment. See *Adjusting Print Quality*.

## Adjusting Print Quality

To remove the cover, see *STATprinter Cover Removal and Replacement*.

# Printer

**STATprinter units contain electronic components that may be damaged or destroyed by electro-static discharge (ESD). Observe appropriate safeguards when servicing. Always transport electronic components and assemblies in static-protected packaging.**

To alter print quality, the R21 contrast adjustment pot (9) located on the Printer Interface Board must be adjusted. Follow these steps (see Figure 2):

1. The printer contrast adjustment pot (R21) is located at the edge of the board. Adjustments may be made using a small adjustment tool while the printer module is still in the cover assembly.

2. To adjust and test print quality, connect the printer cable to the host unit and the STATprinter and turn the host unit power switch **ON**. Open the printer module and turn the printer power button **ON**. Start and then quickly stop a cycle. Doing so causes an error message to be printed. While the error message is printing, adjust the pot (R21).

3. If further adjustment is required, repeat steps 1 and 2. Reinstall the cover. See, *STATprinter Cover Removal and Replacement.*

## Removing the Printer

To remove the printer assembly (1) from the printer module assembly (2), follow these steps (see Figures 3)

Statprinter units contain electronic components that may be damaged or destroyed by electro-static discharge (ESD). Observe appropriate safeguards when servicing.

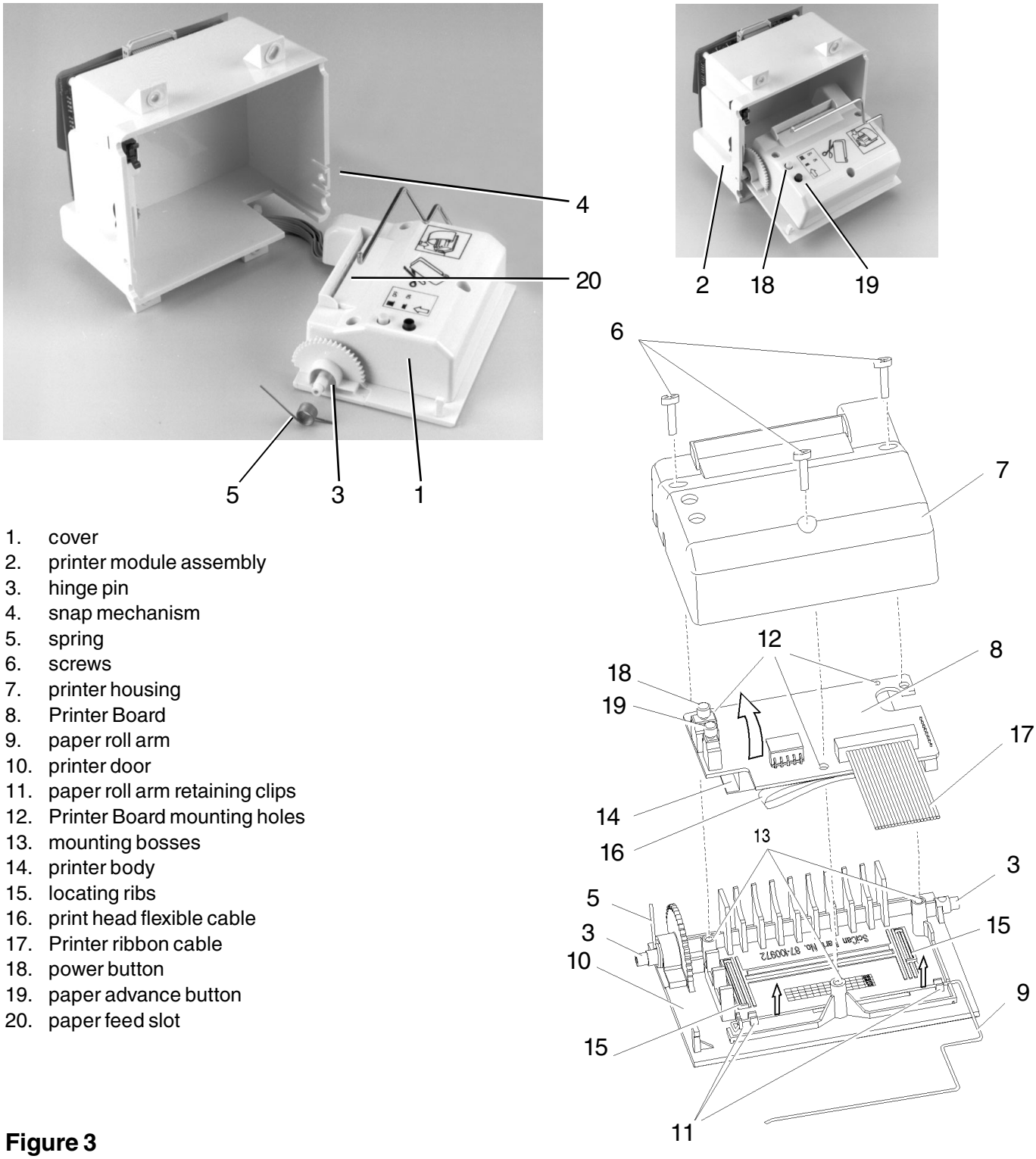
Always transport electronic components and assemblies in static-protected packaging.

1. Remove the printer module. See Removing the Printer Module.

2. Remove the printer assembly from the printer module assembly. The printer assembly is held into the module by two hinge pins (3). The pin on the bottom left of the assembly sits in a recessed slot / retaining hole. The pin on the bottom right hand of the assembly is captured by a snap mechanism. Deflect the snap (4) away from the printer to free the hinge pin, and swing the assembly out of the module housing.

# Printer

3. Remove the printer spring (5) from the left hand hinge pin and retain for re-assembly.




1. cover
2. printer module assembly
3. hinge pin
4. snap mechanism
5. spring
6. screws
7. printer housing
8. Printer Board
9. paper roll arm
10. printer door
11. paper roll arm retaining clips
12. Printer Board mounting holes
13. mounting bosses
14. printer body
15. locating ribs
16. print head flexible cable
17. Printer ribbon cable
18. power button
19. paper advance button
20. paper feed slot

**Figure 3**

# Printer

4. Using a #1 Phillips screwdriver, remove three screws (6) from the printer housing (7) and set them aside for use in re-assembling the printer.

5. Remove the housing. Note the orientation of the Printer Board (8) and the paper roll arm (9) assembled on the printer door (10).

6. GENTLY lift the Printer Board upwards and away from the printer door.

   Exercise care while handling the board. The printer is integral to the wiring board. Do not place strain on the connections of the ribbon cable soldered to the board.

7. Remove the paper roll arm from the clips (11).

8. Carefully rest the Printer Board beside the assembly.

## Replacing the Printer

**STATprinter units contain electronic components that may be damaged or destroyed by electro-static discharge (ESD). Observe appropriate safeguards when servicing. Always transport electronic components and assemblies in static-protected packaging.**

To replace the printer, follow these steps (see Figures 3):

1. Carefully snap the paper roll arm (9), in the position shown, back into the clips (11) on the printer door.

2. Place the Printer Board (8) back into position on the printer door (10).

   Note the alignment of the printer board mounting holes (12) and the mounting bosses (13) on the printer door. The black plastic printer body (14) rests between the locating ribs (15) on the inside of the printer door.

3. Check that the print head flex cable (16) and printer ribbon cable (17) are not pinched between the printer door and the wiring board.

4. Place the printer housing (7) on the printer door (10). Check again to be sure that the flexible cables are not pinched between the cover and the door. The power button (18) and the paper advance

# Printer

button (19) must protrude through the openings in the cover and operate freely.

5. Using a #1 Phillips screwdriver secure the printer housing to the printer door with the three screws (6) retained during the disassembly procedure. **Do not over tighten these screws.**

6. Place the printer spring (5) on the left hand hinge pin of the printer assembly, with the long arm positioned to align with the long slot on the module housing.

7. Place the left hand hinge pin in the recesses slot / retaining hole and align the long spring arm. Swing the right hand hinge pin towards the module housing and push firmly onto the snap mechanism (4).

8. Replace the Printer Interface Board. See Replacing the Printer Interface Board.

11. Power the unit **ON**. Load the thermal paper and adjust the print quality.

See Installing Paper Into the STATprinter in the STATprinter Operator's Manual. See, *Adjusting Print Quality*.

12. Reinstall the cover. See STATprinter Cover Removal and Replacement.

## Removing Paper Jams

**If paper jams in the printer and cannot be removed by pressing the paper advance button, the printer must be disassembled. Do not pull the paper backwards through the printer. Never put utensils or tools into the paper exit slot.**

When paper is jammed in the printer, follow these steps (see Figure 3):

1. Turn the host unit power **OFF**.

2. Make sure the printer power button (18) is in the **OFF** position and disconnect the printer cable (2) (Figure 1) from the host unit printer connector port and the STATprinter.

3. Using scissors, cut the paper between the roll and the paper feed slot (20).

# Printer

4. Using a #1 Phillips screwdriver, remove the three screws (6) from the printer housing (7) and set them aside for use in reassembling the printer. Remove the housing.

5. Note the orientation of the exposed printed wiring board and the paper roll arm assembled on the printer door (10). Remove the paper roll arm (9) from the clips (11).

6. Gently lift the printed wiring board (8) upwards and away from the printer door (10). **Exercise care while handling the board. The printer is integral to the wiring board. Do not place strain on the connections of the ribbon cable soldered to the board. Do not remove the connector of the flexible cable (16) from the connector header on the board.** The paper drive mechanism on the underside of the wiring board is now exposed.

7. Using a pair of tweezers or fine needle-nosed pliers, **carefully** remove the paper from the mechanism.

8. When the paper is removed, follow the steps described in *Replacing the Printer* to reassemble the printer

# Document Change Record

| Document: 96-104268 | | Title: Printer | |
|---|---|---|---|
| Revision | ECO | Notes | Date |
| 2.0 | 04-0020 | Updated chapter as per prEN13060 requirements. | January 16, 2004 |
| 1.0 | 97-069 | Initial Release | November 24, 1997 |